

1. A mechanical drive system for an accessory gearbox of a gas turbine engine, which engine has a high-pressure drive shaft and a low-pressure drive shaft, the drive system comprising:

a first tower shaft connected by a first gear arrangement to the high-pressure drive shaft; and

a second tower shaft connected by a second gear arrangement to the low-pressure drive shaft;

wherein the accessory gearbox is driven by the first tower shaft and the second tower shaft drive.

2. The mechanical drive system of claim 1, wherein the first tower shaft is concentric with the second tower shaft.

3. The mechanical drive system of claim 2, wherein the first gear arrangement includes a first bevel gear attached to the high-pressure drive shaft, and a second bevel gear attached to the first tower shaft, wherein the first bevel gear and the second bevel gear are engaged with one another.

4. The mechanical drive system of claim 2, wherein the second gear arrangement includes a first spur gear, a second spur gear, an intermediate shaft, a first bevel gear, and a second bevel gear, wherein the first spur gear is attached to the low-pressure drive shaft, and the second spur gear and the first bevel gear are attached to the intermediate shaft, and the second bevel gear is attached to the second tower shaft;

wherein the first spur gear and the second spur gear are engaged with one another; and

wherein the first bevel gear and the second bevel gear are engaged with one another.

5. A mechanical drive system for an accessory gearbox of a gas turbine engine, which engine has a high-pressure drive shaft and a low-pressure drive shaft, the drive system comprising:

a first tower shaft driven by the high-pressure drive shaft; and
a second tower shaft driven by the low-pressure drive shaft;
wherein the accessory gearbox is driven by the first tower shaft and the second tower shaft.

6. The mechanical drive system of claim 1, wherein the first tower shaft is concentric with the second tower shaft.

7. The mechanical drive system of claim 6, wherein a first gear arrangement connects the first tower shaft to the high-pressure drive shaft, and the first gear arrangement includes a first bevel gear attached to the high-pressure drive shaft, and a second bevel gear attached to the first tower shaft, wherein the first bevel gear and the second bevel gear are engaged with one another.

8. The mechanical drive system of claim 7, wherein a second gear arrangement connects the low-pressure drive shaft to the second tower shaft, and the second gear arrangement includes a first spur gear, a second spur gear, an intermediate shaft, a first bevel gear, and a second bevel gear;

wherein the first spur gear is attached to the low-pressure drive shaft, and the second spur gear and the first bevel gear are attached to the intermediate shaft, and the second bevel gear is attached to the second tower shaft;

wherein the first spur gear and the second spur gear are engaged with one another; and

wherein the first bevel gear and the second bevel gear are engaged with one another.

9. A gas turbine engine, comprising:

a high-pressure drive shaft connected to a high-pressure compressor and a high-pressure turbine;

a low-pressure drive shaft connected to a low-pressure compressor and a low-pressure turbine;

wherein the high-pressure drive shaft and the low-pressure drive shaft rotate about an axially extending engine centerline;
an accessory gear box;
a first tower shaft driven by the high-pressure drive shaft; and
a second tower shaft driven by the low-pressure drive shaft;
wherein the accessory gearbox is driven by the first tower shaft and the second tower shaft.

10. The gas turbine engine of claim 9, wherein the first tower shaft is concentric with the second tower shaft.

11. The gas turbine engine of claim 10, wherein a first gear arrangement connects the first tower shaft to the high-pressure drive shaft, and the first gear arrangement includes a first bevel gear attached to the high-pressure drive shaft, and a second bevel gear attached to the first tower shaft, wherein the first bevel gear and the second bevel gear are engaged with one another.

12. The mechanical drive system of claim 11, wherein a second gear arrangement connects the low-pressure drive shaft to the second tower shaft, and the second gear arrangement includes a first spur gear, a second spur gear, an intermediate shaft, a first bevel gear, and a second bevel gear;

wherein the first spur gear is attached to the low-pressure drive shaft, and the second spur gear and the first bevel gear are attached to the intermediate shaft, and the second bevel gear is attached to the second tower shaft;

wherein the first spur gear and the second spur gear are engaged with one another; and

wherein the first bevel gear and the second bevel gear are engaged with one another.